

Claims

- [c1] 1. A dummy process, suitable for a chemical mechanical polishing (CMP) apparatus including a polishing head, a polishing table, and a polishing pad, wherein the polishing pad is disposed on the polishing table, the polishing head comprises a protective hood, a base, a retaining ring and a wafer supporting assembly, and wherein the base is below the protective hood, the retaining ring is fixed around a rim of the base, the wafer supporting assembly is located below and in a distance from the base, and a wafer receiving recess is defined by an inner surface of the retaining ring and the wafer supporting assembly, the dummy process comprising:
- providing a wafer;
 - attaching the wafer onto the wafer receiving recess;
 - moving up the wafer supporting assembly to make the bottom surface of the retaining ring more protrusive than the bottom surface of the wafer;
 - moving the polishing head onto the polishing table;
 - pressing down the base such that the retaining ring contacts a surface of the polishing pad and the wafer does not contact the surface of the polishing pad; and
 - rotating the polishing table.

- [c2] 2. The dummy process as recited in claim 1, wherein the wafer is a dummy wafer.
- [c3] 3. The dummy process as recited in claim 1, wherein the wafer supporting assembly comprises a supporting board and a flexible membrane, the supporting board has a plurality of holes perpendicularly extending through the supporting board, and the flexible membrane is connected to and extends under the supporting board to provide an attaching surface for the wafer.
- [c4] 4. The dummy process as recited in claim 3, wherein the step of attaching the wafer includes attaching the wafer to an attaching surface of the flexible membrane.
- [c5] 5. The dummy process as recited in claim 3, wherein the step of moving up the wafer supporting assembly comprises creating a negative pressure within a hollow chamber between the base and the wafer supporting assembly such that an upward force is applied onto the flexible membrane.
- [c6] 6. The dummy process as recited in claim 5, wherein the CMP apparatus further comprises a pump connected externally with the polishing head.
- [c7] 7. The dummy process as recited in claim 6, wherein the

step of creating a negative pressure within the hollow chamber further comprises using the pump to draw out gases from the chamber.

[c8] 8. The dummy process as recited in claim 1, wherein, before the step of rotating the polishing table, further comprising a step of adding polishing slurry on the polishing pad.

[c9] 9. A polishing-pad conditioning process, suitable for a CMP apparatus including conditioner, a polishing head, a polishing table, and a polishing pad, wherein the polishing pad is disposed on the polishing table, the polishing head comprises a protective hood, a base, a retaining ring and a wafer supporting assembly, and wherein the base is below the protective hood, the retaining ring is fixed around a rim of the base, the wafer supporting assembly is located below and in a distance from the base, and a wafer receiving recess is defined by an inner surface of the retaining ring and the wafer supporting assembly, the polishing-pad conditioning method comprising:

attaching a wafer onto the wafer receiving recess;
moving up the wafer supporting assembly to make the bottom surface of the retaining ring more protrusive than the bottom surface of the wafer;
moving the polishing head onto the polishing table;

pressing down the base such that the retaining ring contacts a surface of the polishing pad and the wafer does not contact the surface of the polishing pad; and rotating the polishing table for conditioning contour of the polishing pad.

[c10] 10. The polishing-pad conditioning process as recited in claim 9, wherein the wafer is a dummy wafer.

[c11] 11. The polishing-pad conditioning process as recited in claim 9, wherein the wafer supporting assembly comprises a supporting board and a flexible membrane, the supporting board has a plurality of holes perpendicularly extending through the supporting board, and the flexible membrane is connected to and extends under the supporting board to provide an attaching surface for the wafer.

[c12] 12. The polishing-pad conditioning process as recited in claim 11, wherein the step of attaching the wafer includes attaching the wafer to an attaching surface of the flexible membrane.

[c13] 13. The polishing-pad conditioning process as recited in claim 11, wherein the step of moving up the wafer supporting assembly comprises creating a negative pressure within a hollow chamber between the base and the wafer

supporting assembly such that an upward force is applied onto the flexible membrane.

- [c14] 14. The polishing-pad conditioning process as recited in claim 13, wherein the CMP apparatus further comprises a pump connected externally with the polishing head.
- [c15] 15. The polishing-pad conditioning method as recited in claim 14, wherein the step of creating a negative pressure within the hollow chamber further comprises using the pump to draw out gases from the chamber.
- [c16] 16. The polishing-pad conditioning process as recited in claim 9, wherein, before the step of rotating the polishing table, further comprising a step of adding polishing slurry on the polishing pad.